

CLAIMS

What is claimed is:

1. A galley chiller system for an aircraft comprising:

at least one condenser having a fluid, said fluid in said at least one condenser rejecting heat to a first surrounding environment; and

at least one evaporator receiving said fluid from at least one condenser, said fluid in said evaporator absorbing heat from a second surrounding environment including a galley cart and a third surrounding environment including an air duct of an aircraft cooling system.
2. The galley chiller system according to claim 1, comprising a first evaporator absorbing heat from said second surrounding environment, and a second evaporator absorbing heat from said third surrounding environment.
3. The galley chiller system according to claim 1, wherein said air duct is a cabin recirculation air duct.
4. The galley chiller system according to claim 2, comprising a recirculation evaporator control valve and, a controller connected to said control valve controlling a flow of fluid through said valve into said evaporators to obtain a desired proportion of fluid flow between said evaporators.

5. The galley chiller system according to claim 4, comprising a temperature sensor in said third surrounding environment detecting a temperature with said temperature sensor connected to said controller, said controller commanding said control valve in response to said temperature.

6. The galley chiller system according to claim 4, wherein opening said control valve increases the absorption of heat from the air duct, and closing said control valve increases the absorption of heat from the galley cart.

7. The galley chiller system according to claim 6, wherein opening said control valve decreases the flow of fluid to said first evaporator and increases the flow of fluid to said second evaporator, and closing said control valve increases the flow of fluid to said first evaporator and decreases the flow of fluid to said second evaporator.

8. The galley chiller system according to claim 6, wherein opening said control valve decreases a load on said aircraft cooling system.

9. The galley chiller system according to claim 1, wherein said galley chiller system includes at least two evaporators, at least two condensers, and at least one compressor, said condensers fluidly connected to each of said evaporators and said at least one compressor fluidly connected to said condensers.

10. The galley chiller system according to claim 1, comprising a heat exchanger arranged in an exhaust air vent, said heat exchanger including a cooling passage extending in a loop between said heat exchanger and said condenser, said cooling passage at least partially defining said first surrounding environment.

11. The galley chiller system according to claim 10, wherein a fan is arranged in said exhaust air vent blowing air from said exhaust air vent through an aircraft outflow valve.

12. The galley chiller system according to claim 1, wherein said aircraft cooling system includes an air conditioning pack having a ram air duct with a liquid heat exchanger arranged in said ram air duct, said heat exchanger including a liquid cooling passage extending in a loop between said heat exchanger and said condenser, said fluid cooling passage at least partially defining said first surrounding environment.

13. The galley chiller system according to claim 1, comprising a liquid heat exchanger including a liquid cooling passage extending in a loop between said heat exchanger and said condenser, said heat exchanger arranged in a power electronics cooling system in close proximity to a portion of an aircraft electronics system.

14. The galley chiller system according to claim 1, comprising a heat exchanger including a cooling passage extending in a loop between said heat exchanger and said condenser, said heat exchanger arranged in a cargo area, and said cooling passage at least partially defining said first surrounding environment.

15. The galley chiller system according to claim 1, comprising a heat exchanger including a cooling passage in a loop between said heat exchanger and said condenser, said heat exchanger located remotely from said condenser transferring heat from said condenser to a remote location of the aircraft.

16. A galley chiller system for an aircraft comprising:

at least one condenser having a fluid, said fluid in said at least one condenser rejecting heat to a first surrounding environment;

at least one evaporator receiving said fluid from at least one condenser, said fluid in said evaporator absorbing heat from a second surrounding environment; and

ducting defining at least a portion of said second surrounding environment, said ducting carrying cooled air in said ducting to a galley cart.

17. The galley chiller system according to claim 16, comprising a galley having multiple galley carts, said ducting carrying said cooled air to said multiple galley carts.

18. The galley chiller system according to claim 17, comprising multiple galleys with said ducting carrying said cooled air to said multiple galleys.

19. The galley chiller system according to claim 16, wherein said condenser, said evaporator, and at least a portion of said ducting is arranged in an overhead area of the aircraft.